

What is claimed is:

1. A method of manufacturing a semiconductor device comprising:  
forming a wiring pattern over a semiconductor wafer, in which an interconnect is  
5 formed from an integrated circuit, from a pad which is a part of the interconnect, and  
forming an external terminal on the wiring pattern;  
forming a resin layer on the semiconductor wafer;  
forming a mask layer having an opening pattern on the resin layer;  
removing a part of the resin layer in a state in which the mask layer is disposed  
10 on the resin layer to form an opening in the resin layer; and  
cutting the semiconductor wafer along the opening.
2. The method of manufacturing a semiconductor device as defined in claim 1,  
wherein the mask layer is formed of a resin.
- 15 3. The method of manufacturing a semiconductor device as defined in claim 1,  
wherein the mask layer is formed of a dry film.
4. The method of manufacturing a semiconductor device as defined in claim 1,  
20 wherein a part of the resin layer is removed by sandblasting or etching.
5. The method of manufacturing a semiconductor device as defined in claim 1,  
wherein the resin layer is formed to cover at least a lower part of the external terminal.
- 25 6. The method of manufacturing a semiconductor device as defined in claim 1,  
wherein an insulating layer is formed on the semiconductor wafer, and the wiring  
pattern is formed over the insulating layer.

7. The method of manufacturing a semiconductor device as defined in claim 5, wherein an insulating layer is formed on the semiconductor wafer, and the wiring pattern is formed over the insulating layer.

5

8. The method of manufacturing a semiconductor device as defined in claim 6, wherein the insulating layer is formed avoiding a region over which the opening is formed.

10 9. The method of manufacturing a semiconductor device as defined in claim 7, wherein the insulating layer is formed avoiding a region over which the opening is formed.

15 10. The method of manufacturing a semiconductor device as defined in claim 1, further comprising:

forming a solder resist layer so as to cover the wiring pattern excluding a region in which the external terminal is formed before forming the resin layer.

20 11. The method of manufacturing a semiconductor device as defined in claim 7, further comprising:

forming a solder resist layer so as to cover the wiring pattern excluding a region in which the external terminal is formed before forming the resin layer.

25 12. The method of manufacturing a semiconductor device as defined in claim 8, further comprising:

forming a solder resist layer so as to cover the wiring pattern excluding a region in which the external terminal is formed before forming the resin layer.

13. The method of manufacturing a semiconductor device as defined in claim 9,  
further comprising:

forming a solder resist layer so as to cover the wiring pattern excluding a region  
5 in which the external terminal is formed before forming the resin layer.

14. The method of manufacturing a semiconductor device as defined in claim 10,  
wherein the solder resist layer is formed avoiding a region over which the opening is  
formed.

10

15. The method of manufacturing a semiconductor device as defined in claim 11,  
wherein the solder resist layer is formed avoiding a region over which the opening is  
formed.

15

16. The method of manufacturing a semiconductor device as defined in claim 12,  
wherein the solder resist layer is formed avoiding a region over which the opening is  
formed.

17. The method of manufacturing a semiconductor device as defined in claim 13,  
20 wherein the solder resist layer is formed avoiding a region over which the opening is  
formed.

18. A semiconductor device manufactured by using the method as defined in  
claim 1.

25

19. A circuit board on which the semiconductor device as defined in claim 18 is  
mounted.

20. Electronic equipment comprising the semiconductor device as defined in claim 18.